

# THE VULCAN LETTER

Voice of the MSTP at the University of Alabama at Birmingham

June 2013

## NIH EXPANDS KIRSCHSTEIN AWARDS TO INCLUDE ALL INSTITUTES

### New NIH Institutes Now Support Fellowships for MD/PhD Students

By Robin Lorenz

In order to address the critical need for clinician scientists with the medical training and research experience to investigate problems of relevant diseases in humans, the National Institute Health supports Ruth L. Kirschstein Individual National Research Service Award Fellowships for M.D./Ph.D. students. Awards provide an annual stipend, an offset of a portion of the tuition and fees, and a research allowance for a period of up to six years. Applicants must be enrolled in a formally combined M.D./Ph.D. program, propose to pursue research in clinical

or basic health sciences, and be supervised by a mentor with appropriate scientific research experience when the application is submitted.

Initially, when the program began in 1999 only four NIH institutes supported the F30 funding mechanism (NIMH, NIDA, NIAAA, and NIEHS). Over the years several other institutes have added their support for MD/PhD student fellowships, but not all have offered this funding mechanism. Recently, in a bit of good news for predocs in a dual degree programs (e.g., M.D./Ph.D., D.O./Ph.D.) it was announced that multiple new NIH institutes will participate in the F30 Grant Mechanism and by April 2014 all institutes will be required to participate.

Participating Organizations now include:

- National Cancer Institute ([NCI](#))
- National Heart, Lung, and Blood Institute ([NHLBI](#))
- National Human Genome Research Institute ([NHGRI](#))
- National Institute on Aging ([NIA](#))
- National Institute on Alcohol Abuse and Alcoholism ([NIAAA](#))
- National Institute of Allergy and Infectious Diseases ([NIAID](#))
- National Institute of Arthritis and Musculoskeletal and Skin Diseases ([NIAMS](#))
- *Eunice Kennedy Shriver* National Institute of Child Health and Human Development ([NICHD](#))
- National Institute on Deafness and Other Communication Disorders ([NIDCD](#))
- National Institute on Dental and Craniofacial Research ([NIDCR](#))
- National Institute of Diabetes and Digestive and

NIH Institute	Number of Applications Reviewed	Number of Applications Awarded	Success Rate	Total Funding
NIAAA	3	1	33.3%	\$33,952
NIA	55	20	36.4%	\$791,897
NIDA	6	4	66.7%	\$146,114
NIDCD	6	2	33.3%	\$61,445
NIDCR	18	11	61.1%	\$449,460
NIDDK	46	26	56.5%	\$1,019,737
NIEHS	16	6	37.5%	\$219,403
NHLBI	99	20	20.2%	\$774,426
NIMH	25	6	24.0%	\$198,674

continued  
on page 3

1

# INCOMING CLASS OF 2021

compiled by Stephanie Brosius



## Jeremie Lever

Jeremie graduated from the University of Santa Barbara in 2011 with a B.S. in Chemistry

and Biochemistry. He is currently interested in immunology, microbiology, infectious disease and global health. Jeremie's previous research spanned many fields, ranging from organometallic coordination chemistry, tRNA biochemistry and research and development for CGMP production of a biopharmaceutical vaccine target. In his spare time, he likes to read, run, play basketball, and ski.



## Lindsay Stoyka

Lindsay graduated with a B.S. in Biomedical Science and Cell and Molecular Biol-

ogy from Grand Valley State University in 2013. Her research interests include cancer biology

and cell/molecular developmental biology. Previously, she studied other behavioral ecology of a biparental fish, convict cichlids, focusing specifically on parental care practices as well as the transmission of microbes between parents and offspring. Lindsay loves playing sports (rugby, soccer, basketball), but also is an avid reader and writer. She also enjoys watching really geeky television shows and eating way too much ice cream.

## Tyler McCaw

Tyler obtained his bachelors in Chemical Engineering and Biochemistry in 2011 from North Carolina State University. Following his diverse

interests, he previously studied novel applications of ionic liquids in a chemical engineering lab. However, he has also been involved in other projects, from antibody production to purification in industrial labs. Now that he's in Birmingham, Tyler is looking forward to studying tumor immunology. Outside of lab, he enjoys soccer and running. Sounds like it is about time to get an intramural soccer team going for the MSTP!



## Mark Pepin

Mark graduated with a B.S. in Chemical Engineering from Clemson Univer-

sity in 2011. He then went on to pursue a masters in Biomedical Engineering at UC Davis determining the notch-regulated mechanism of skeletal muscle hypertrophy and developing a novel strategy for engineering skeletal muscle tissue given this mechanism. His research interests include biomedical engineering, orthopedics, musculoskeletal biomechanics and tissue engineering. In his spare time he hopes to race in the US Olympic marathon trials and to spend time with his wife Sandy and daughter Adelaide.



## Muhan Hu

Muhan graduated from the University of Georgia in 2013 with majors in Biochem-

istry and Molecular Biology and Psychology. She is very interested in developmental biology, women's reproductive health and cancer. During her undergraduate career, Muhan ex-

amined the regulatory function of the unique DNA base Base J in regulating protein binding to DNA, especially at the end of the telomere region of the chromosomes of *Trypanosoma brucei*. This glucosylated hydroxymethyluracil molecule is found in most kinetoplastid organisms. Outside of school, she enjoys ballroom dancing, hiking, kayaking, reading, painting and hanging out with friends.



**Stephen Gragg**

Stephen graduated from Lipscomb University in 2012 with

a degree in Molecular Biology. His prior research interests included studying the hydrolysis of isolevuglandin-PE adducts by the enzyme NAPE-PLD and studying the role of discoidin domain receptor-1 and integrin alpha-1 beta-1 in glomeruloscle-

rosis. He describes his current research interests as eclectic, so start recruiting him to work in your lab! Outside of work, Stephen runs, reads, cooks for friends and like virtually everyone else in his class, plays soccer.



**Tim Kennell**

Tim graduated from the University of Northern Georgia.

He graduated in May 2013 with a degree in Biology and Chemistry. Before getting accepted into the MSTP, his research involved establishing a camelid heavy-chain antibody library that will be screened in order to select an antibody that will attach to a plant pathogen. The gene for that antibody will be used to generate a transgenic plant that is immune to this

pathogen. He also was involved in establishing a method to break the dormancy of Venus fly trap seeds; however they discovered that liquid smoke induces a secondary dormancy in the seeds. His current research interests are in the immune response to cancer and oncogenomics. Outside of lab, Tim considers himself to be an amateur entomologist and enjoys collecting and preserving insects. He also plays the piano.

**WELCOME TO ALL OF OUR INCOMING CLASS! WE ARE DELIGHTED TO HAVE YOU HERE!**

## NIH funding continued...

- Kidney Diseases ([NIDDK](#))
- National Institute on Drug Abuse ([NIDA](#))
- National Institute of Environmental Health Sciences ([NIEHS](#))
- National Institute of Mental Health ([NIMH](#))

2011 Success Rates and Total Funding for participating institutes are shown in the table

on page 1.

The UAB MSTP currently has 7 students with active NIH fellowship support (F30/F31). I encourage everyone to write an F30/F31 grant as it can help you form a strong foundation in research design, methods, and analytic techniques appropriate to your proposed dissertation research. In addition, you

create a well-conceived career plan and, if funded, a track record in grant support, which will help increase your ability to obtain future federal support for your research.



# GRADUATING CLASS OF 2013

compiled by Stephanie Brosius

## Dr. Olusimidele Ayeni

Dr. Ayeni received her Ph.D. from the Department of Microbiology. Her dissertation research utilized flow cytometry and a novel *in vitro* suppression assay to quantify the effector function of the epitope-specific CD8 T cells derived from HIV-1 infected controllers and non-controllers. She will be headed to Baylor to do her residency in pediatrics. She selected this residency because it provides her with the opportunity to positively impact the lives of children and those who care for them. She will miss many things about Birmingham, especially her church family and the great friends she made in her time here. Dr. Ayeni will also crave some of her favorite food locations: the lunch specials at Surin, Dreamland's banana pudding, the Fish Market, and some of the most delicious fresh fruit this side of the Atlantic from the farmer's market (right around this time of the year)!! Her advice to current and future students is to work hard, explore Alabama, and to find a way to help out as Birmingham is a complex, but amazing community that could use our help. And most of all, cherish the years because they will be gone faster than you think.

## Dr. Michael Alberti

Dr. Alberti's dissertation centered around developing an adenoviral gene therapy vector for targeting the pulmonary microvasculature. He received his degree in the department of Pathology and is also doing his residency in the same field at UCLA. This residency fits with his love of being in the lab more than being on the hospital floor and his desire to have a research career that would be minimally disrupted by his clinical pursuits/duties and the overall lifestyle. He will greatly miss his friends and the humid summers of Birmingham (wait, scratch that last one). Dr. Alberti recommends that students give themselves plenty of time to figure out what specialty they want to pursue and to have an open mind about it.

## Dr. Nicole Brossier

Dr. Brossier received her Ph.D. in Cell Biology for her work on the relative contributions of classic Ras and R-Ras proteins to cellular signaling pathways, proliferation and migration in malignant peripheral nerve sheath tumors. She will complete her pediatrics residency at Washington University in St. Louis. Pediatrics was a natural



fit due to her love of kids. However, she also felt like pediatrics was one of the few areas where you can introduce changes that make real differences in your patients' lives, instead of just managing the side effects of your patients' lifetime of abuse of their own bodies. It's also one of the few areas not rife with cynicism. I prefer to keep my illusions about the goodness of humanity. Dr. Brossier emphasized that medical school class grades do matter and to take them seriously. She also wishes she had walked for her Ph.D. graduation, even if you're having another ceremony in only a year and a half: your mentor will not be allowed to hood you at the medical school graduation ceremony. Also if you need to prearrange your third and fourth year classes; don't allow the medical school to tell you that you can't.

### **Dr. Sarah Kern Whitley**

Dr. Kern Whitley studied transcriptional regulation of the IL17a and f genes, which produce cytokines involved in the pathogenesis of many autoimmune disorders and help protect the host from infection with extracellular bacteria and fungi. Her Ph.D. was completed in the Department of Microbiology. Sarah is completing her preliminary medicine year at UAB, so she is not leaving yet, but when she does, she will miss the wonderful community of people, the warm weather and the southern charm of the city of Birmingham. After her prelim year, Dr. Kern Whitley will be doing her residency in Dermatology in Pittsburgh. She was seeking a specialty that would allow her to pursue immunology research as one of her primary responsibilities. She found that she most enjoyed outpatient medicine and settings that offered a lot of variety with some opportunities to perform procedures. She was originally attracted to pediatrics and OB/GYN, but eventually decided that dermatology was most compatible with her interests and goals. Derm involves a lot of immunology and is a fertile ground for research. The clinical schedule also offers flexibility that is helpful in balancing a career as a physician scientist and/or family life. Sarah wants other students to know that maintaining emotional intelligence and professionalism will aid you during clinical rotations. Although possessing a Ph.D. is a distinct advantage in applying for residency (in some fields more than others), you must

have competitive grades and USMLE scores to even be considered for residency interviews. In dermatology, most applicants with a step 1 score below 230 will not be offered interviews. USMLE step 1 score is the principle screening measure programs use, so take it seriously. Although skills you have acquired during your graduate education will certainly help you progress your career, it is not true that your grades and step scores are de-emphasized during the residency application process if you possess a Ph.D.

### **Dr. Asher Albertson**

Dr. Albertson received his Ph.D. in the department of Neurobiology, where he analyzed changes in the expression of an ion channel called the HCN channel contribute to epilepsy associated with developmental brain malformations. Asher will miss the good friends he has made in the MSTP, graduate program and medical school the most. The people at UAB are fantastic. Being part of the culture here has been wonderful. I enjoy Birmingham's fantastic spring and summer weather the most. Drinking one of our local beers on my porch after work was always the highlight of my day. Plus the weather allows for great hiking and camping. Dr. Albertson will be doing his residency in Neurology at Washington University in St. Louis. He selected neurology for many reasons. He loved the way neurologists approach problems. The logical, stepwise approach to diagnose fits well with the way he thinks. He loves the physical exam and the neurological exam is an amazing assay for underlying pathology. Watching a neuro exam change as patients improve is incredibly rewarding. Most of all, he likes the opportunities for basic and translational research in neurology. Questions about the brain are fun to ask and incredibly rewarding to answer. Dr. Albertson recommends that students take every aspect of their training seriously. This is your chosen profession. This isn't a series of exercises to get through. Embrace what you do here with a good attitude and treat it like your job. That's what it is.



# MSTP STUDENT FLASHLIGHT: A BRIEF LIGHT ON STUDENT RESEARCH

compiled by William Webb



## Jon Lockhart (GS-1)

**Lab:** Tom Ryan, Ph.D. – Department of Biochemistry & Molecular Genetics

**Research:** I am currently investigating stem cell therapies for beta-thalassemia major (a.k.a. “Cooley’s anemia”). We have transgenic mice that produce human globin chains. In our beta-globin knockout mice, once the developmental fetal-to-adult hemoglobin switch

has been completed (at about 2 weeks of age) the mice die. I am trying to use allogeneic bone marrow transplant in the absence of conditioning in newborns to cure Cooley’s anemia. Furthermore, we are also exploring the use of in vitro differentiated erythroid progenitors as cell therapy.

## Stephanie Brosius (GS-2)

**Lab:** Steven Carroll, M.D., Ph.D. – Departments of Pathology and Neurobiology

**Research:** I study malignant peripheral nerve sheath tumors. These aggressive sarcomas commonly arise in patients with the tumor susceptibility disorder Neurofibromatosis-1 and have no known treatment. My research focuses on the role of the Schwann cell growth factor neuregulin-1 and its receptors, erbB3 and erbB4, in tumor development. My current work focuses on preclinical trials in xenografted mice using chemotherapeutics targeted against receptor tyrosine kinases, including the erbB family of RTKs, that are active in human MPNSTs. As multiple tyrosine kinases are actively signaling within most tumors, our goal



## Daniel DiToro (GS-1)

**Lab:** Casey Weaver, M.D. – Department of Pathology (Immunopathology)

**Research:** I am exploring a potential role for insulin-like growth factors in CD4 T-cell differentiation. Our early data suggests that these factors may be involved in modulating the balance of pro-inflammatory effector CD4s and anti-inflammatory regulatory CD4s. Interestingly, insulin-like growth factors have been implicated in a diverse array of auto-immune pathologies, including Grave’s disease, rheumatoid arthritis, and type 1 diabetes. Understanding how these factors influence CD4 T-cell differentiation and function may help us better understand these disease processes and hopefully lead to new therapeutic interventions.



is to develop a combinatorial treatment that would minimize the resistance and toxicity commonly seen in these therapeutic regimens.



## Travis Hull (GS-2)

**Lab:** James George, Ph.D. and Anupam Agarwal, M.D. – Department of Epidemiology

**Research:** In our laboratory, we study the role of the innate immune system in cardiac inflammation caused by chronic heart failure or transplantation. Heme oxygenase-1 (HO-1) is an enzyme that mediates the breakdown of cellular heme, forming carbon monoxide, iron, and bilirubin in the process. These products of HO-1-mediated heme degradation modulate the

continued on page 14

# BIRMINGHAM RECAPTURES ITS MAGIC

by Stephanie Brosius

Birmingham earned the nickname “Magic City” in the period from 1881 through 1920 as it was the primary industrial center of the South, with two main rail hubs passing through to transport the steel and iron produced within the city. Recently, downtown Birmingham has been getting a facelift and the urban renewal in the city has been garnering national attention. National Geographic featured Birmingham in their Traveler magazine as a “city on the upswing,” while the New York Times labeled it as a top 10 city for young professionals due to the combination of job opportunities at UAB, affordable living and diversity of cultural activities and parks available. So how has a city that has been so frequently associated with the horrific violence of the Civil Rights movement embraced its past and moved into the modern era by breathing new life into a downtown that had all but been declared dead? The vision all began with the integration of an urban park, baseball diamond and local craft breweries to create an atmosphere that was family friendly but retained

the character of the area. Railroad Park opened last summer and integrates the railways that were the lifeblood of the city for over 50 years. This park offers a variety of free events, from live music, fitness courses and art openings. From the hillside, you can see into the new Regions Field, home of the Birmingham Barons. This new and state of the art stadium opened in April and is worth a visit as it is even gorgeous on the outside. Thirsty Thursdays have been retained, but with a new twist in that Good People Brewery, a local craft brewery situated downtown, is now partnering with the baseball diamond to provide a variety of beers. Good people isn't the only local brewery receiving attention, however, with others such as Avondale popping up and producing interesting and complex flavors as part of the Free the Hops Campaign.

Not to be outdone, Birmingham's culinary scene has also been honored for its inventive and diverse restaurants by Zagat. What makes Birmingham

continued on page 15

## DR. WILLIAM GEISLER NAMED CLINICAL ASSOCIATE DIRECTOR

William M. Geisler, M.D., M.P.H, has joined the MSTP as Clinical Associate Director. Dr. Geisler is an Associate Professor in the UAB Department of Medicine, Division of Infectious Diseases, and he has an adjunct faculty appointment in the UAB Department of Epidemiology. He received his B.S. Degree in Microbiology from the University of Tennessee in Knoxville (1988-1992) and his M.D. from the University of Tennessee in Memphis (1992-1996). He subsequently completed Internal Medicine Residency training at the University of Michigan in Ann Arbor (1996-1999) and Infectious Diseases Fellowship training at the University of Washington in Seattle



(1999-2002); during his fellowship, he also received his M.P.H. Degree in Epidemiology from the University of Washington School of Public Health.

Dr. Geisler joined the UAB faculty in 2002. His research program focuses on the epidemiology, clinical manifestations, natural history, diagnosis, treatment, immunology, and genetics of genital *Chlamydia trachomatis* infections. A major goal of his research is to contribute to the development of a chlamydia vaccine and to the availability of novel therapeutics for chlamydia. Dr. Geisler is on the editorial board of *Sexually Transmitted Diseases* and serves as an expert consultant for the CDC. At UAB, he also serves as Co-Director of the SOM Fundamentals II Medical Microbiology Laboratory Course and as a faculty member of the Alabama-North Carolina STD/HIV Prevention Training Center. When not working, he enjoys spending time with his family, as well as kayak fishing.

# BIRMINGHAM RECAPTURES ITS MAGIC

by Stephanie Brosius

Fifty Years Forward: Celebrating the 50<sup>th</sup> Anniversary of the Civil Rights Movement

It was 1963 when Wyatt Walker “appeal[ed] to the citizenry of Birmingham, Negro and white, to join us in this witness for decency, morality, self-respect and human dignity” in his Birmingham Manifesto. Largely ignored by the media initially, this document formed the foundation for demonstrations, sit-ins and marches to push for equality and an end to racial discrimination. By April, many demonstrators had been arrested, including Martin Luther King, Jr. who penned his now famous letter from the Birmingham jail and images of police brutality throughout the city made headlines across the country. Five months later, Birmingham solidified its position in the media as a volatile location for protestors when the Ku Klux Klan bombed the 16<sup>th</sup> Street Baptist Church, killing four children.

Fifty years later, Birmingham has evolved and has embraced the multitude of cultures represented in our population. UAB has been

recognized as one of the most diverse campuses in the country and is collaborating with the city of Birmingham to commemorate the Civil Rights movement with the 50 years forward campaign. The events, exhibits and tours associated with this campaign have garnered national attention as the TODAY show ranked Birmingham one of the top 5 hottest places to visit in 2013. As we reflect on the critical year that instigated sweeping changes to our nation, numerous historical sites associated with these events are opening their doors to the public for tours. Of note are the 16<sup>th</sup> Street Baptist Church and Bethel Baptist church where the Freedom Rides were organized. Additionally, the Birmingham Civil Rights Institute is celebrating Black History Month with “Black from the Heart of Dixie,” an exhibit of portraits of famous Birmingham natives. If you haven’t had the opportunity to visit the Institute, I would highly recommend the walk to freedom processional gallery, featuring life-size figures illustrating

racial inequalities and key events on the path to equality.

If you would rather spend the afternoon outside, check out Kelly Ingram Park, which was a key location for many sit-ins and demonstrations in 1963. Seen as the gateway to the Civil Rights District, the park contains statues of many leaders in the movement and boasts a walking tour with detailed recollections of people involved in the marches that occurred here. For music buffs, the Alabama Jazz Hall of Fame at the Carver Theater is running a new exhibit and the theater is looking to showcase local jazz artists all this month. Carver Theater was one of the black only theaters during the Jim Crow era and is now marked as a historical site. More events are popping up every day both at UAB and in the community at large, so be on the lookout in our upcoming events calendar in the next few issues. Additional information on events associated with the 50 Years Forward campaign can also be found at [50yearsforward.com](http://50yearsforward.com).



## Dr. James Gladden

Dr. Gladden grew up in a city 1 hour north of Birmingham and has spent over 12 years in Birmingham, including his undergraduate degree, so this city is all he really knows. He will mostly miss the time for self-reflection while waiting to get a car tag renewal. He received his Ph.D. in the Department of Physiology and Biophysics, where he studied the role of oxidative stress in volume overload heart failure. He has always been fascinated with the heart and being a cardiologist provided an excellent opportunity to directly interact with patients that have pathology he wants to research. He advises students to take their medical school courses seriously as they will affect your board scores, which are very important for obtaining the residency you want. If you are interested in medicine or a medicine subspecialty, think heavily about doing a research-based program (ABIM research pathway). These pathways allow for more research time in residency and often allow for the integration of your residency/fellowship/postdoc. Dr. Gladden will be doing his internal medicine residency at Mayo Clinic through the ABIM Research Pathway.

## Dr. Brian Dizon

Dr. Dizon received his Ph.D. in the department of microbiology and immunology, where he studied how neonatal exposure to Group A Streptococci induced long-lasting self-reactive anti-

bodies that conferred protection in a mouse of autoimmune diabetes by binding beta cell antigens and inhibits the activation of diabetogenic T cells during physiologic tissue remodeling in early life. Brian will miss his best friends and godson, floors 4-5 of Shelby, and lab lunches at Chez Fonfon. He is interested in transitional care of children with autoimmune diseases as well as the long-term impacts of anti-rheumatic treatments on the developing immune repertoire of children. There aren't many med-peds physician scientists in the US so pursuing this residency was a great way to link my scientific and clinical interests, as well as carve out a possible academic niche. When Dr. Dizon moves to University of Rochester, NY for his residency. To future students he notes to be passionate, be independent, focus and commit.

## Dr. Eva Clark

Dr. Clark matched at Baylor in the field of med-peds. She selected this residency for two main reasons. One, she wanted a primary care background to prepare herself for future work in a developing setting. Two, she wanted to do combined pediatric/adult ID fellowship. Her favorite thing about Birmingham was the people. She will miss the friends and colleagues who she met living here as they were wonderful! Eva did her Ph.D. in the department of Microbiology where she studied natural humoral responses to 11 different Plasmodium falciparum vaccine candidate antigens in a hypo-

endemic cohort in the Peruvian Amazon. She emphasizes the importance of listening to older students! Work hard during your first and second years of medical school. It used to not matter as much but now it certainly does. Study hard for both steps. And finally, come back to clinic in June so that you can enjoy your fourth year after all that hard work!

## Dr. Travis Lewis

Dr. Lewis matched in Neurology at the University of Pennsylvania. His dissertation focused on the development of an adenoviral vector platform for selective gene delivery to neurons.

## Dr. John Hammond

Dr. Hammond matched at UAB in psychiatry. His dissertation focused on AMPA receptor trafficking in schizophrenia.

## Dr. Victor Lin

Dr. Lin matched into the Internal Medicine ABIM Research Pathway at UAB. Look for him again this fall as a familiar face in the Translational Medicine Journal Club. Victor's dissertation was on the regulation of p27KIP1 by Trip6 and its implications in cancer progression.

# PUBLICATIONS

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**Dobbin ZC**, Landen CN. The Importance of the PI3K/AKT/MTOR Pathway in the Progression of Ovarian Cancer. *Int J Mol Sci*. 2013 Apr 15;14(4):8213-8227.

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# ANNOUNCEMENTS

Nicholas Eustace was selected for the K-RITH summer program in South Africa. He will be blogging all summer, so look for more details on how to track his adventure!

Dr. Lorenz was named the new Assistant Dean for Physician-Scientist Education.

Jennifer Hadley's poster titled Antipsychotic drug treatment restores impaired limbic system functional connectivity in schizophrenia won the first place poster award at the Seventh Annual Department of Psychiatry and Behavioral

Neurobiology Research Symposium

Jennifer Hadley won first place for oral presentations at the Second Annual Biomedical Engineering Research Symposium for her talk titled Temporal coherence of spontaneous, low frequency fluctuations in the BOLD fMRI signal predicts response to antipsychotic drugs in unmedicated patients with schizophrenia.

Stephanie Brosius received the Ralph D. Lille award from the Histochemical Society for excellence in research presented by a graduate student.

Congratulations to Eva Clark for her induction into Alpha Omega Alpha, the national medical honor society recognizing scholarship and professional qualifications.

Asher Albertson was presented with the Samuel Clements Little Award for excellence in Neurology.

The William Boyd Medal for exceptional performance in Pathology was awarded to Michael Alberti.

Congratulations to Stacey Watkins and David Gaston who defended their dissertations within 1 hour of each other on June 20. Both of the newly

minted doctors return to the wards on July 1<sup>st</sup>, so wish them luck if you see them!

Heather Allen and Nicholas Reish got married on April 27<sup>th</sup>! Wishing them both the best!

Zach Dobbin and his lovely wife Johanna welcomed their first child, Julia into the world on March 15, 2013.



# FOOD TRUCK FRENZY HITS BIRMINGHAM

by Stephanie Brosius

In a city known for its love of food and flavors, the food truck movement has firmly taken hold. If you have somehow missed out on the mobile eateries or are looking to expand on your favorites check out the listings below with a short description of the style of food, recommendations on menu items to sample and how to track your favorite trucks.

## Shindigs

Shindigs' motto is local food fast and features seasonal ingredients that are touted to be relatively healthy. Make sure to check out the steamed buns for \$3 each, which many have said should be their own truck! The asian steamed buns are filled with pork and a shiso hoisin sauce while

the short rib sandwich features sweet soy jus. For a side, the truffle fries are a must and in the fall they have sweet potato fries. The truck has a fixed schedule of locations which changes each week as indicated on their website <http://www.shindigscateringtrucks.com/>

## Melt

Melt rings true to its moniker by featuring gourmet grilled cheeses to cater to the classic comfort food cravings with a modern twist. For the vegan out there, they even have a vegan cheese (who knew such a thing existed). For the full experience, try the Southern Comfort with

continued on page 15

## UPCOMING EVENTS IN BIRMINGHAM

- Farmer's Market at Brookwood Village 4-7pm every Friday from June 7-Aug 2
- Relax by the Tracks in Railroad Park 6/27 the art exhibit Light Rails which features neon lights under the 18<sup>th</sup> St. railroad underpass will be unveiled following a night of live music.
- Birmingham Barons game 6/28
- Veteran's Park Free Friday Flicks Hotel Transylvania 6/28
- Jazz in the Park, Avondale Park 6/30
- Thunder on the Mountain Fireworks show 7/4
- Fourth of July Celebration at the Birmingham Zoo 7/4-7/7
- Veteran's Park Free Friday Flicks The Lorax
- Veteran's Park Free Friday Flicks Madagascar 3
- McWane Science Center 15<sup>th</sup> Birthday Party 7/13 Travis Taylor from Nat Geo's Rocket City Rednecks will be on site doing live demos
- Pepperplace Market event with Cajun music, food trucks and, of course, fresh market 4-8pm 7/16
- Veteran's Park Free Friday Flicks Wreck-It Ralph
- Art on the Rocks at the Birmingham Art Museum 7/19
- ENDING July 21, DinoDiscovery at the Birmingham Zoo with anamatronic dinosaurs
- Glow in the Dark 5K 7/26



# SUCCESSFULLY NAVIGATING TRANSITIONS IN THE MSTP

compiled by Stephanie Brosius

Part of being a successful medical scientist is learning how to establish an appropriate balance between the clinical and research realms. We begin the process early in our training, balancing graduate school and medical school coursework. However, after our first two years of medical school, we are either immersed within the research or clinical curriculum. Navigating the transitions between these stages in the program can often be crucial to your success in terms of getting off to a solid start in lab, or landing a competitive residency position. Below is a compilation of advice from current students Daniel DiToro (GS-1), Asher Albertson (MS-IV) and Nicole Brossier (MS-IV).

## Transitioning from medical school to graduate school

For many, the transition to graduate school is one that comes more readily as most of your class work has been completed and you have greater control over your schedule. However, unlike in medical school, there are no endpoints and defining goals can be difficult. Mentorship can be crucial in this process. Key factors that many consider in choosing a mentor include the possibility of high impact publications, the development of a tool set in terms of techniques that will facilitate the work you want to do,

and freedom to pursue new ideas and your own interests. It is important to recognize early on how much interaction you need with your mentor, especially in terms of guidance and how much freedom you want in the lab.

After you have selected a mentor, planning and developing an understanding of the context of your research is crucial to prevent yourself from wasting time in lab. You should put significant work into reading/thinking about your project before you start experiments and take LOTS of notes. Feel free to chase ideas through the literature and familiarize yourself with what is known in the field. Once you get to lab, there will always be experiments to do and it will be difficult to devote the time necessary to really get on top of the literature. It's much easier to do first. If you don't have the time to do this before you get to lab, spend the first couple of months doing nothing but reading. Don't start any experiments until you know exactly what you want to do, why you want to do it, and what the best way to do it is.

In that vein, I found it immensely helpful to write an F30/F31 early on in my dissertation as it brought the key questions, experiments and potential problems that could arise to the forefront of my mind. Writing always clarifies your goals and puts your research into perspective. This also will give you a starting point for having a committee meeting

to qualify.

## Transitioning from graduate school back to medical school

For many of us, this is the transition that provokes the most anxiety as the knowledge gained in medical school has long since been stashed into the deep abyss that is distant memory during the PhD years. Here is some sage advice from our outgoing MS-IVs to help those looking to defend their dissertation in the upcoming year.

On defending your dissertation: Make sure you know your shit. You are not an undergraduate anymore. This is your job. Your career starts with the work you present in your dissertation. Take ownership and pride in it. This is not a box to check. It's something YOU made. It has your stamp of approval on it. Act with the appropriate level of work ethic and integrity. While finishing the dissertation, this should be your sole focus. It would be smart, however, to have at least one month between your defense to finish your revisions (you will have some!) and shadow in clinics if you haven't participated in MSTP 795.

Neither Nicole nor Asher did much reading in advance to prepare for the return to clinic. Asher mostly focused on Bates to re-

view exam findings and clinical skills, but was unsure about how you could adequately prepare to return. Nicole stated that isolated reading is not too helpful since there's so much to remember. You could try reading through Case Files in Internal Medicine to start you off (Pharm would also be helpful), but I wouldn't count on that helping much. Honestly, it might be better to find an older student who wouldn't mind letting you do a full HPI and physical on some of their patients (probably in medicine). It would probably be even more helpful if they'd give you a few pertinent articles to read beforehand. Having reading material beforehand can help you review the pathophysiology, differential diagnosis and treatment as well as your HPI and physical exam skills. Even though you obviously won't have that available when you return to clinics, I feel like it might help boost your skills and knowledge during the pre-return phase. She also felt it would be helpful to get with an upper level student to discuss practical things like the courtesies of paging, how to use the MIST system and how to arrange follow-up appointments and consults.

Both Asher and Nicole felt that the transition back to medical school was difficult due to the loss of correct vocabulary and experience with the physical exam, and that this was more pronounced when starting back off-cycle (both returned in January), as students have already completed numerous clinical rotations. They felt like it was difficult to not look like an idiot under those circumstances. However, since it was a sink or swim environment, you will catch up

if you put in the time and effort. Ultimately, neither one felt prepared in the least bit to return. Asher summarized it in the following way: Returning just sucks. You can't spend 4+ years thinking about different things and expect to be able to just "jump right back in." But we all do it, we all catch up and we all make it. So will you. Just understand that you aren't going to know anything and that you will look like an idiot at points. If you can accept that, then it's not that bad. Further, as you start to get good at it, it can become really fun. A little adversity never hurt anyone. Nicole also put it into perspective reminding us that the MS3 year is pretty-much forced incompetency as you have 4-8 weeks per rotation. By the time you finally figure out what you're doing, you move on to another topic that's completely different.

As for interviews, the advice varied and will vary based on where your clinical interests lie and the competitiveness of the residency selection process. Asher felt that his interviews were for the most part, are conversational and easy. He says, "Don't overthink it. Just get a killer suit and be yourself. Travelling around meeting people and seeing programs can be really

fun. Plus, you wouldn't be here if you weren't a little narcissistic; as such, interviews are the med student's wet dream." Nicole, on the other hand, mentioned that the PhD is not carrying students as far as it used to in many specialties and that board scores and grades in the first two years

of medical school DO make a difference. She states, "Starting back in January can be problematic for more reasons than off-cycle anxiety. I had one program that specifically asked for more clerkship grades

when deciding whether or not to interview me, and once I informed them that I didn't have any more to report at this time, they declined. I also had many programs at which I DID interview ask me about why I didn't have more clerkship grades available, and many did not appear satisfied by my description of our flexible shortening program. In particular, they weren't thrilled that I wouldn't even complete my surgery clerkship until right before my intern year. Be prepared for this possibility if you return in January, particularly if you're applying in a competitive specialty or to competitive programs. "



# STUDENT FLASHLIGHT CONTINUED....

inflammatory response to tissue injury. We study how manipulation of HO-1 expression within macrophages and dendritic cells modulates their differentiation



and effector functions in vivo in response to cardiac injury.

## **Jennifer Hadley (GS-3)**

**Lab:** Adrienne Lahti, M.D. – Department of Psychiatry & Behavioral Neurobiology

**Research:** I use advanced neuroimaging methods to study treatment response in patients with schizophrenia. Antipsychotic drugs alleviate some of the symptoms of schizophrenia, but each of the available drugs is only effective for ~60% of patients. Current treatment strategies involve numerous, lengthy medication trials until an effective medication is identified. We are currently investigating the use of a single, pre-treatment resting-state fMRI scan for functional connectivity analysis to identify a biomarker of good treatment re-

sponse. My role in this work has been to identify and develop optimal methods of data processing and analysis to extract clinically useful data from high-dimensional data sets. After I complete my Ph.D. training and return to medical school, I plan to complete residency training in Psychiatry and continue researching the applications of engineering to optimize patient outcomes.



## **Zachary Dobbin (GS-3)**

**Lab:** Charles Landen, M.D. – Department of Obstetrics & Gynecology

**Research:** Our lab studies ovarian cancer and the mechanisms that drive chemotherapy resistance. Unfortunately, ovarian cancer's 5-year survival rate has not significantly increased in the past 30 years, and the reason for this is that the majority of patients have a recurrence that is resistant to chemotherapy. I am working to isolate the sub-population of cells responsible for

chemotherapy resistance and recurrence in ovarian cancer using patients' samples that are grown in a xenograft mouse model.



## **Sini Nwaobi (GS-4)**

**Lab:** Michelle Olsen, Ph.D. – Department of Cell, Developmental & Integrative Biology

**Research:** My work is focused on understanding the epigenetic regulation of Kir4.1, an astrocytic inward rectifying potassium channel. Kir4.1 is essential to normal CNS development – both glial-specific and global knock-out of Kir4.1 in rodents leads to a pronounced phenotype where animals suffer from ataxia, seizures, hypomyelination of spinal cord, and ultimately die prematurely. Notably, Kir4.1 is linked to several disorders in humans including epilepsy, MS, and autism spectrum disorders. We also know that Kir4.1 expression is altered following traumatic brain and spinal cord injury; and it is thought that this loss contributes to the pathophysiological sequelae that follows the primary insult. Our lab studies DNA meth-



ylation as a regulator of Kir4.1 expression in both normal and pathological states, particularly in spinal cord injury.



**Evan Thomas (GS-4)**

**Lab:** John Fiveash, M.D. – Department of Radiation Oncology

**Research:** My research focuses on applying a newly-available clinical technology within radiology call dual-energy CT to radiation oncology applications. Specifically, I am trying to mitigate the impact of certain types of imaging artifact on treatment planning. This imaging artifact is often present for patients with spinal hardware, hip prostheses, or other non-biologic implants and causes difficulty in accurate treatment simulation. I have also done a great deal of work on quantifying treatment efficiency improvements afforded by employing un-flattened beam profiles in linear-accelerator based radiotherapies.

# BIRMINGHAM MAGIC CONTINUED...

unique is that phenomenal food does not have to be wildly expensive, although we do have restaurants like Hot and Hot Fish Club, which hit the top end of the price range. Hot and Hot and its head chef Chris Hastings were a key feature within this article as Chef Hastings was the winner of the James Beard Foundation Award for best chef in the Southeast region. Looking for more authentic cuisine and fast? Check out the

numerous food trucks that have popped up downtown or at one of the frequent food truck festivals in the city (see article on Food Trucks for more details and recommendations). So for anyone that thought Birmingham was firmly rooted in the past, we invite them to come visit us for a while, meander around the city, nibble on some Southern cuisine and guzzle a craft beer for a while and watch the magic being revived.

## FOOD TRUCK FRENZY CONTINUED...

onion, bacon and pulled pork on sourdough with a southern BBQ sauce. Check out their facebook page for locations.

**Cantina on Wheels**

Cantina on Wheels is usually parked in front of the Alys Stephen Center at UAB. Featuring classic tex-mex cuisine such as tacos, quesadillas and nachos. I highly recommend the steak nachos, which somehow manage not to weigh you down despite being coated in a gooey queso.

**Taqueria Guzman**

For a more authentic Mexican, Taqueria Guzman is an absolute must. This food truck was voted one of the

South’s best food trucks last year and features lengua tacos, delicious carnitas and chorizo. Look for this truck around Homewood.

**Dreamcakes and Repicci’s Italian Ice and Gelato**

If you are craving sweets, Dreamcakes also has a truck that changes cupcake offerings on a daily basis. For a cooler option now that summer has arrived, check out Repicci’s Italian Ice and

Gelato “truck.” They offer at least 7 flavors and with how tasty they are you will want to try them all.





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